# Art. VI.—Fossil Fish Remains from the Tertiaries of Australia.

#### PART II.

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(With Plates V.-VIII.).

[Read 13th June, 1907.]

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#### I.—INTRODUCTION.

The present paper is written as a continuation of the section previously published, which dealt entirely with our Tertiary selachians included in the sub-order Asterospondyli. We now describe one of our remaining selachians, as well as the chimæroids and two members of the Actinopterygii, altogether represented by seven species. We have also many specimens of ver-

<sup>1</sup> Proc. Roy. Soc. Viet., vol. xvii., n.s., pt. i., 1904, pp. 267-297.

tebræ and other fish remains from the Barwonian and Kalimnan deposits, as well as several examples from the Pleistocene of Victoria. These are not included at present, as we wish to obtain a more complete recent series for comparison. The following genera are now dealt with, all the species of which appear to be new, namely, Myliobatis, Edaphodon, Ischyodus, Labrodon, and Diodon. Of these, Myliobatis and Atopomycterus (Diodon) have been previously recorded by Professor Tate, but no species have been figured or described.

In addition to the large amount of material available to us in the National Museum collection and in the private collection of one of us, we have made use of the collections of Messrs. G. Sweet, F.G.S., J. R. Dixon, and F. P. Spry, and to these gentlemen we now express our thanks for kindly favouring us with the opportunity of dealing with their specimens. To Prof. Baldwin Spencer, C.M.G., F.R.S., we are indebted for handing to us for description the example of Ischyodus from Table Cape.

## IL-DESCRIPTION OF SPECIES.

Order Selachii.

Family Myliobatidae.

Genus Myliobatis, Cuvier.

# Myliobatis moorabbinensis, sp. nov. (Plate V., Figs 1-3).

Description.—Median palatal teeth about five times as wide as long, with a rather narrow and depressed aspect, and a distinct marginal curvature. Palatal surface flat to slightly convex. Denticles of the articulating surface strong, and numbering about ten in 10 mm. of length.

Dimensions.—Width of palatal teeth, 22 to 23 mm.; length, 5 to 6 mm.; length of articulating surface, about 5 mm.

Locality and Horizon.—Beaumaris, Port Phillip, Kalimnan. (Pritchard Coll.).

Observations.—The genus Myliobatis has previously been recorded by the late Prof. R. Tate in his "Census of the Austra-

lian Tertiary Fauna." Two species of the genus have also been recorded by Messrs. J. Dennant and A. E. Kitson in their "Catalogue of the Described Species of Fossils in the Cainozoic Fauna of Victoria, South Australia and Tasmania," namely, M. toliapica Agassiz (from Beaumaris), and M. plicatilis Davis (from Table Cape). Mr. Dennant, with whom we have conferred respecting these fossils, is unable to give us any definite information as to the original identification of the fossils referred to, but they were presumably identified by Prof. Tate. Our specimens from Beaumaris are distinct from M. toliapica in their shorter lateral dimension, but since the latter species is in other respects fairly closely allied, it is probable that the earlier Victorian record of M. toliapica was based on an imperfect comparison of M. moorabbinensis. The Table Cape specimen is not available for comparison.

M. moorabbinensis appears to differ from our living forms by being much smaller and of a more slender character. These features seem constant, judging by their uniformity in the fragmentary remains hitherto obtained.

Order Chimaeroidel.

Family Chimaeridae.

Genus Edaphodon, Buckland.

Edaphodon sweeti, sp. nov. (Plate V., Figs. 4-6.)

Description. Mandibular teeth robust, with 5 tritors, and a prominent and rather sharp beak. In its structure, the beak tritor is laminated in front to half its length, and tubulated behind; the tubules follow the direction of the laminæ, and are obliquely arranged along the oral margin. The remaining tritors have a fine, conspicuous, tubulated structure. Median tritor very large, strongly convex, elongately triangular, and

<sup>1</sup> Jour. Roy. Soc. N.S.W., vol. xxii., pt. 2, 1888, p. 247.

<sup>2</sup> Records Geol. Surv., Victoria, vol. i., pt. 2, 1903, p. 94.

<sup>3</sup> Since writing the above, we have heard with much regret of the decease of this widely known geologist, who has done so much to further the study of our Victorian Tertiary fauna

closely conjoined by a smaller and narrow tritor which extends to the oral margin. Posterior tritor elongate-subquadrate, tending posteriorly to subdivide lineally. The fifth tritor lies behind the symphysial facette, and is narrow, long-elliptical, and follows the curve of the lower border. Symphysial facette slightly longer than one-third the entire length of the lower border.

Palatine teeth (nearly always imperfect) relatively broad, and showing the presence of three tritors, the hinder and inner one being very much larger than the remaining two, and generally fully twice the length and breadth of the next largest tritor. Structure of the tritors similarly tubulate to those of the mandibular, but coarser. This may account for their usually more decomposed condition in the fossil state.

Vomerine teeth narrow; inner symphysial surface concave, and furnished with a usually large number of elongated tritors, ranging from 7 to 24. Tritors of the symphysial margin largest, elongate towards the front, whilst in the oral margin they are more numerous, and broken into an imbricated succession. Tritors with a very finely tubulated structure.

Dimensions.—Approximate, on account of worn condition of teeth.

MANDIBULAR TEETH.

		I	length.		Height.		Greatest Thickness.
Spec. a. (type)	-	-	69	~	36	-	17
Spec. b	-	-	75	-	30	-	16

PALATINE TOOTH.

VOMERINE TEETH.

		Length.		Height.		Greatest Thickness.
Spec. a	-	71	~	29	-	12
Spec. b. (imperfect)	-	43	-	12	-	10
Spec. c. (imperfect)	-	37	-	20	-	10
Spec. d	-	34	-	1.4	-	6

Locality and Horizon.—Grange Burn, near Hamilton, Western Victoria from the nodule bed at the base of the Kalimnan (Nat. Mus. Coll., pres. A. A. Kelley; also F. Spry Coll., G. Sweet Coll., and G. B. Pritchard Coll.), Beaumaris, Port Phillip, base of the Kalimnan (Nat. Mus. Coll., pres. by the late W. B. Jennings. and Coll. by the late W. Kershaw; also G. B. Pritchard Coll.).

Observations.—As in the case of the Diodon presently to be described, we are also fortunate in having so complete a series of these fish remains, and although we lack many completely preserved specimens, there is a large number of fragmentary specimens, and these have materially assisted in the elucidation of their characters as a whole. In all, we have examined about 35 examples of this form. Judging by the general characters shown in the previously illustrated examples of Edaphodon teeth, our forms show some slight divergences from typical specimens in the number and arrangement of the tritors, apparently making an approach towards Chimæra. The recorded range of Edaphodon is Cretaceous to Oligocene. It does not appear to have been noted before as occurring in the rocks of the southern hemisphere.

Comparing our fossils with specimens of Edaphodon in our Museum from British localities, and with various descriptions and figures available for our purpose, the nearest ally appears to be Edaphodon bucklandi, Agassiz<sup>2</sup> from the British Eocene; but this species is a larger form, is more heavily built, and the tritors have a coarser structure.

# Genus Ischyodus, Egerton.

# Ischyodus mortoni, sp. nov. (Plate VI., Fig. 6.)

Description.—The specimen to which we append the above name is part of a left mandibular tooth having a very elongate and robust character, and with a remarkable concavity towards the upper part in the posterior region. The extreme anterior portion of the tooth is missing, but the posterior is fairly complete, showing part of the smooth superficial bony layer of the posterior margin. This marginal layer is marked by a series of slightly undulating thread-like ridges, which are most distinct on the inner third of the surface, a stronger ridge marking off this area. It is, moreover, convexly rounded off where it meets

<sup>1</sup> Compare diagrams in Smith Woodward Cat. Foss. Fishes (Brit. Mus.), pt. ii., 1891, p. 54.

<sup>2</sup> Poiss, Foss., vol. iii., 1843, p. 351, pl. xl.,  $\alpha$ , figs. 1-4, 9-12, 19-24; also E. eurygnathus, Ag., Dixon, Foss. Sussex, 1850, p. 111, pl. x., figs. 18, 19, 22, pl. xii., f. 5.

the symphysial facette. The width of the latter is 8 mm. near the posterior margin. A narrow elevated ridge runs along the symphysial facette about 5 mm. from the margin, making an angle of about 30 deg. with the posterior layer. The tritors consist of very coarsely tubulated material, and in this specimen have been almost entirely weathered out, only a thin layer remaining, but sufficient to show the presence of three very long, narrow tritors on the posterior portion of the tooth.

Dimensions.—Height, 30.5 mm.; greatest thickness, 16 mm. Locality and Horizon.—Table Cape, Tasmania. From the "Turritella beds." Jan Jukian. Tasmanian Museum Collection, Hobart.

Observations.—The above species shows a striking similarity in its general characters to Ischyodus egertoni, Buckland<sup>1</sup> from the British Jurassic, but is much narrower and more elongate, with long narrow tritors showing a more marked parallelism.

The genus Ischyodus has been previously recorded from the Tertiary rocks of Amuri Bluff, New Zealand, and identified with Agassiz's I. brevirostris by E. T. Newton.<sup>2</sup> The latter species belongs to the Lower and Upper Cretaceous of England. It is unfortunate that a reference to the Amuri Bluff deposits as Greensand<sup>3</sup> should have been made and perpetuated, considering that the fauna is so distinctly tertiary. Subsequent to Newton's description of the New Zealand specimen, three others have been recorded under the same specific name by J. W. Davis, from Amuri Bluff.<sup>4</sup> It is just possible, however, that since these specimens are more or less fragmentary, further material may show the New Zealand form to be a distinct species.

With regard to the name I. brevirostris, A. S. Woodward has already shown<sup>5</sup> that I. thurmanni, Pictet and Campiche, has priority over it.

<sup>1</sup> Chimaera egertonii, Buckland. Proc. Geol. Soc. Lond., vol. ii., 1835, p. 206. Chimaera (Ischyodus) egertoni, Agassiz. Poiss. Foss., vol. iii., 1843, p. 340, xl.c, figs. 1-10.

<sup>2</sup> Quart, Jour. Geol. Soc., vol. xxxii., 1876, p. 326, pl. xxi., fig. 5.

<sup>3</sup> Hector, Handbook of N. Zealand, 1883, p. 31 (referred to as Lower Greensand).—Newton, Q.J.G.S., vol. xxxii., 1876, p. 326 (Lower Greensand).—Davis, Trans. R. Dubl. Soc., vol. iv., ser. 2, 1888, p. 42 (Gretaeco-tertiary).—Smith Woodward, Cat. Foss. Fishes, Brit. Mus., pt. ii., p. 68 (Greensand).

<sup>4</sup> Trans. R. Dubl. Soc., vol. iv., ser. 2, 1888, p. 42, pl. vii., figs. 10-13.

<sup>5</sup> Cat. Fossil Fishes, Brit. Mus., pt. ii., 1891, p. 67.

The Tasmanian specimen, collected from Table Cape, was presented to the Tasmanian Museum, Hobart, by Chas. Mackenzie, Esq. We owe the opportunity of dealing with this specimen to the courtesy of Prof. W. B. Spencer, C.M.G., who received it from Mr. Morton, the curator, after whom we have much pleasure in naming it.<sup>1</sup>

Order Actinopterygii.

Family Labridae.

Genus Labrodon, Gervais.

Labrodon confertidens, sp. nov. (Plate V., Fig. 7.)

Description. Lower pharyngeal dentition subtriangular, with a very broad base, and apparently produced in front to a broadly rounded point, but our specimen is unfortunately imperfect in this respect. Surface strongly convex in the median area and turnid towards the front. Teeth very densely crowded, normally circular in section, excepting where so closely packed as to become compressed into polygonal form, both laterally, and from back to front along the lines of greatest convexity. Posteriorly the teeth become distinctly triangular. The largest teeth are situated in the median area, and form about 4 rows: they measure up to 3 mm. in diameter. The smallest teeth are situated anteriorly, and principally along the lateral extremities; they average about .75 mm, in diameter. By the fractured anterior of this pharyngeal, it may be noted that there are five successional series of teeth in addition to the functional layer. The unworn teeth are seen to have perfectly spherical and highly enamelled crowns.

Dimensions.—Width of completed specimen, 54 mm.; width at the base of beak-like projection, about 10 mm.; anteroposterior diameter, probably about 31 mm.

Locality and Horizon.—Grange Burn near Hamilton, Western Victoria. Base of the Kalimnan. National Museum Collection (presented by A. A. Kelley, Esq.).

<sup>1</sup> Since this was written we have heard with the deepest regret of the death of the distinguished curator of the Tasmanian Museum.

Observations.—The nearest ally to the above species appears to be the North American form described under the name of Pharyngodopilus carolinensis, from the Tertiary Phosphate beds of South Carolina; but the characters and arrangement of the teeth are distinct, the latter form having its dentition in more regular series. We might also draw some comparison with L. haueri, Münster, sp., from the Miocene of the Vienna Basin, Italy, Sicily and Brittany, but this form does not have its teeth so crowded, being usually openly spaced.

# Labrodon depressus, sp. nov. (Plate V., Figs. 8-9.)

Description.—There is another specimen of the dentition of Labrodon in our collection which, since it shows considerable divergence from the foregoing species, we have thought advisable to separate, noting some of its principal features. This pharyngeal is remarkable for its thin and depressed aspect, nearly equiangular in outline, with rather irregular and closely-packed teeth, and showing on the edges four successive layers. On the lower surface the bases of the teeth are well shown, and each possesses a conspicuous and well-developed cavity, which is central and circular. As compared with the previous species, the teeth are rather lenticular than circular.

Dimensions.—Diameter of largest teeth, 3.5 mm.; smallest teeth, 2 mm. Average height of teeth, 1.75 mm. Width of hapryngerl, about 27 mm.; antero-posterior diameter, 16 mm.; total thickness, 8 mm.

Locality and Horizon.—Beaumaris, Port Phillip. Kalimnau. (Pritchard Coll.).

Family Diodontidae.

Genus Diodon, Linnaeus.

Diodon formosus, sp. nov. (Plate VI., Figs. 1-3; Plate VII.; Plate VIII., Figs. 1-7.)

Description.—Jaws solid, and apparently heavier than in other known fossil forms. Upper jaw with a broadly-angular beak. Lower jaw rounded in front, and more depressed on the inner

Journ, Acad. Nat. Sci., 2nd ser., vol. viii., 1877, p. 256, pl. xxxiv., figs. 19-24 (especially fig. 20).

<sup>2</sup> Phyllodus haueri, von Münster, Beitr., Petrefact, pt. vii., 1846, p. 6, pl. i., fig. 1.

surface than the corresponding palatal surface of the upper jaw. Denticles of the jaw margin comparatively coarse, and irregular in size, with a vermiculately crinkled surface except where worn. In the largest specimen the pile of palatal plates numbers seventeen, whilst in the smallest specimens before us there are only five, and average sized examples show eleven or twelve.

These Diodon jaws show very considerable variation in form, both as to the angle of the upper jaw margin, which ranges from 95 degrees to 110 degrees; and also in the exeavated area between the palatal pile and the margin, which is often deeply concave, while the distance between the anterior margin of the plates and the denticulated border varies between 8.5 mm. and 18 mm. These measurements were made on full grown examples.

The shape of the palate is generally suboval, in which the lateral axis is the longer.

DIMENSIONS OF THE JAWS OF DIODON FORMOSUS, BASED ON THE MORE PERFECT EXAMPLES.

UPPER	JAW.
-------	------

Lateral Width.		e to	Widt Pal	h of ate.		oth of late.		To. of lates.	Locality.	
15mm.	9.5r	nm.*	-11.51	nm.	7	mm	4 in	perfect	Beaumaris	
31 ,,	-19.5	,,	20.5	,,	11	,,	(%)		Beaumaris	
36 "	21	,.	25	1)	14	,,	10		Beaumaris	
39 ,,*	31	٠,	36,5	,,	18	٠,	8		Beaumaris	
$52^{\circ}$ ,,	49	4.9	34	,,	28	,,	8		Grange Bu	rn
51 .,	41	* *	32	,,	28.5	,,	only 7	visible	Grange Bu	1.11
56 ,,	46	1 2	39	17	26	,,	12		Beaumaris	
66 "*	57	4.5	37	,,	33	"	only 6	visible	Grange Bu	1.11
70 .,	57	.,	4.1	31	33	2.3	17		Beaumaris	
					* (Ci	re.)				

#### LOWER JAW.

Lateral Width.	Base to Front.	Width of Palate.	Depth of Palate.	No. of Plates.	Locality.
26.5mm.	17 mm.	$17.5 \mathrm{mm}$ .	$12.5 \mathrm{mm}$ .	6	Grange Burn
29 ,,	15.5 ,,	20 .,	11.5 ,,	6	Beaumaris
32 ,,	20 ,,	19 ,,	16 "	6 visible	Beaumaris
42* ,,	36 ,.	30 ,,	30 ,,	12	Beaumaris
			* (Circ.)		

In addition to the above, we have a large number of more or less imperfect palates from which the average number of plates in the pile was more accurately determined than might be judged from the above table, and the proportion of incomplete to complete specimens we would estimate at about three to one.

The relatively greater abundance of the upper jaw as compared with the lower may be due to the fact that the lower jaw soon falls away from the fish after death, and thus runs a greater risk of destruction before coming under the influence of sedimentation, and consequent preservation of the remains.

Locality and Horizon.—Grange Burn, Western Victoria, from the nodule bed at the base of the Kalimnan (Nat. Mus. Coll., purchased R. Lindsay; also 2 fine specimens of upper jaws presented by A. A. Kelley; also Spry Coll. and Pritchard Coll.).

Beaumaris, Port Phillip (Nat. Mus. Coll. specimens collected by the late W. Kershaw, several presented by J. A. Kershaw, an exceptionally fine upper jaw presented by C. P. Smart, a lower jaw presented by the late J. F. Bailey and 8 specimens purchased from W. B. Jennings; also Pritchard Coll., including an extensive series of small specimens; and Dixon Coll., which has yielded the largest specimen).—Base of the Kalimnan.

Observations.—The palatal aspect of the upper jaw shows the fossil form to be more angularly pointed at the beak than in the living D. hystrix, L., and more nearly approaching D. blochii, Casteln., both of which species occur in Port Phillip, the latter being the commoner. Lateral margin less curved and more widely divergent than in the living forms, the marginal denticles being generally coarser, averaging ten on each side, whilst our recent forms have twice that number. There is also a greater tendency in the full-grown fossil forms to an extension of the excavated area between the palatal plates and the denticulated oral margin.

It appears that the recent form D. hystrix occasionally attained dimensions nearly equal to that which is indicated by the size of the jaw in the fossil species, since one individual is recorded from the British Museum Collection<sup>1</sup> which has a length of thirty inches, but this is exceptional. Günther<sup>2</sup> mentions the largest form as attaining a length of two feet.

<sup>1</sup> Cat. Fishes Brit. Mus., vol. viii., 1870, p. 306.

<sup>2</sup> An Introduction to the Study of Fishes, 1880, p. 689.

The present species differs from other described fossils in many particulars. From D. sigma<sup>1</sup> it differs in having the dental plates with a subquadrate outline, instead of, as in that species, strongly rounded sides.

From D. vetus<sup>2</sup> it may be readily separated by the broad and angular shape of the jaws, and by their more massive build in the palatal area. It is noteworthy that of the several described fossil forms of Diodon only D. vetus appears to have been preserved as perfectly as the present species.

The only other authentic species to which we may refer is D. scillae, Agassiz<sup>3</sup> from the Miocene of Italy, Sicily and Malta. In this form the palatal plates are thinner and consequently more numerous than in our species, and its lateral boundaries are sinuous and incurved instead of convex.

It was in all probability the herein described species that the late Professor Ralph Tate had in mind when he recorded Atopomycterus from the Older Tertiary of Australia in his "Census" of its fauna. The reason that Tate assigned this fossil to the genus Atopomycterus may probably have been due to the fact that a fish, recorded by Steindachner as Atopomycterus bocagei, had been found in Port Jackson, but this has since been indicated as synonymous with Diodon novemmaculatus, Cuvier.

The genus Diodon is commonest as a Miocene fossil, and is usually associated with other fish and cetacean remains characteristic of phosphatic beds in various parts of the world, but it also occurs in beds of Oligocene and Eocene age.

# Diodon connewarrensis, sp. nov. (Plate VIII., Figs. 8-10).

Description.—Spine smooth, short and strong, after the type of those of D. hystrix, but not so acutely pointed, and without

Martin, Samml. Geol. Reichsmus. Leiden, ser. 1, vol. iii., p. 16, pl. i., figs. 5, 5a, 5b.
 Leidy, Proc. Acad. Nat. Sci. Philad., vol. vii., 1855, p. 397; also Journ. of same
 Society, ser. 2, vol. viii., 1877, p. 255, pl. xxxiv., figs. 15-18.

<sup>3</sup> Poiss, Poss., vol. ii., pt. ii., p. 274. See also Smith Woodward, Cat. Foss. Fishes Brit. Mus., pt. iv., 1901, p. 572; text-figure 20 (p. 573).

<sup>4</sup> Journ. Roy. Soc. N. S. Wales, vol. xxii., pt. ii., 1888, p. 247.

<sup>5</sup> Sitzungsb. and K. Ak. Wiss. Wien, vol. liii., 1866, p. 477, pl. vi., f. 3.

<sup>6</sup> A. Günther, Cat. Fishes Brit. Mus., vol. viii., 1870, p. 308; also W. Macleay, Descr. Cat. Australian Fishes, vol. ii., 1881, p. 280.

the basal grooves. On the other hand, there is evidence of the presence of an anterior ridge such as is seen on the spines of D. blochii. Both the above-mentioned species are living in Port Phillip. D. hystrix being readily distinguished by its short spine with a broad base, whilst D. blochii has fewer and more slender spines with a comparatively narrow base.

The section of the fossil spine is subtrigonal, with the inner surface concave at the base, the roots or basal prongs making an angle of about 120 degrees with the main shaft.

Dimensions.—Length, 6 mm.; width from point to point of the roots, 5 mm.; thickness at the base of the spine, 2 mm.

Locality and Horizon.—Point Campbell clays, Lake Connewarre, near Geelong.—Balcombian (Pritchard Coll.).

Observations.—No separate spines of Diodon appear to have been recorded in the fossil state except those of the type specimen of D. erinaceus Agassiz, from the Upper Eocene of Monte Bolca, near Verona.<sup>1</sup> It therefore seems desirable to record the above fossil with a distinctive name, especially since the example was found in beds of older date than those from which the palates have hitherto been procured.

<sup>1</sup> Poiss, Foss., vol. ii., pt. ii., p. 274. See also Smith Woodward, Cat. Foss. Fishes, Brit. Mus., pt. iv., 1901, p. 572.

HI.-- The Range-in-Time, as hitherto known, of the Genera herein reperried to, IS SHOWN IN THE FOLLOWING TABLE:

Recent.					
Jurassic. Cretaceous Eocene, Oligocene, Miocene. Pliocene. Recent.					
Miocene.					
Oligocene.					
Eocene.	Constitution of the second	*			
Cretaceous					
Jurassie.					
2000	4	1			
	1			- (	1
Genus	Myliobatis -	Edaphoden	Ischyodus -	Labrodou -	Diodon -

IV.—Table of Distribution of the Species now described.

Strabigraphical Horizon,	Kalimman (base)		Jan Jukian	Kalimnan (base)	99	" "	Balcombian	
Relative Abundance.	Not rare -	Common -	Very rare -			Common -	Very rare -	
	,	aris -	,	1	1	nan -	1	
ies.		Beanm		,	1	range B	ì	
Localities	Beaumaris -	Grange Burn and Beannaris	Table Cape -	Grange Burn -	Beaumaris -	Beaumaris and Grange Burn	Lake Connewarre	
-	1		,			,	ı	
		,	•	ı	ı	٠	ł	
		٠	1	1	1	ı	1	
		1	1	,		1	1	
Species.	Myliobatis moorabbinensis	Edaphodon sweeti	Ischyodus mortoni -	Labrodon confertidens -	Labrodon depressus	Diodon formosus -	Diodon connewarrensis -	

## V .- Additions to Bibliography.

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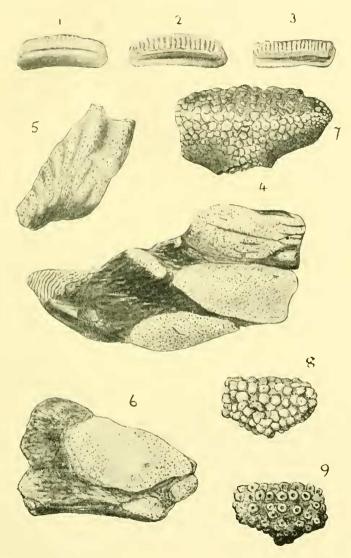
# VI.—CORRIGENDA FOR PART 1.

- P. 280.—12th line from top, for "pl." I. read "pl. XI."
- P. 285.—14th line from top, for "Creep" read "Creek."
- P. 297.—In Explanation to Plates.
  - 14th line from top, delete "[5434]."
  - After Fig. 14 read "Oxyrhina hastalis, Agassiz. Inner surface of posterior tooth; from Beaumaris. Natural size. [5424]."
  - Before Acanthias geelongensis insert "fig. 15" instead of "14."
  - Delete last two lines on p. 297, "fig. 4 Oxyrhina hastalis," etc.

## EXPLANATION OF PLATES V.-VIII.

## V.

- Fig. 1. Myliobatis moorabbinensis, sp. nov. Tooth showing articulating and outer surfaces. Beaumaris.
- Fig. 2. M. moorabbinensis, sp. nov. Lower surface of same tooth.
- Fig. 3. M. moorabbinensis, sp. nov. A tooth of less curvature, showing lower surface. Beaumaris.
- Fig. 4. Edaphodon sweeti, sp. nov. Right mandibular tooth, inner side. Grange Burn, near Hamilton.
- Fig. 5. E. sweeti, sp. nov. Right vomerine tooth. Grange Burn.
- Fig. 6. E. szweeti, sp. nov. Left palatine tooth. Beaumaris.
- Fig. 7. Labrodon confertidens, sp. nov. Lower pharyngeal. Grange Burn. Natural size.
- Fig. 8. Labrodon depressus, sp. nov. Pharyngeal; upper surface. Beaumaris.
- Fig. 9. L. depressus, sp. nov. Lower surface of same specimen. All figures of the natural size.



F. Chapman, ad nat. del.

Teeth of Australian Tertiary Fishes.